Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: VECTA Oil and Gas
Well Name/Number: Heberle 21-33
Location: SE NW Section 33 T7N R32E_____
County: Yellowstone**, MT; Field (or Wildcat)** Wildcat – Wolf Springs Area

Air Quality

(possible concerns)
Long drilling time: No, 12 to 15 days drilling time.
Unusually deep drilling (high horsepower rig): No, a double or small triple drilling rig to drill to a 6300' TD vertical Amsden Formation well test.
Possible H2S gas production: Slight H2S possible.
In/near Class I air quality area: No class I air quality area, in the area of review.
Air quality permit for flaring/venting (if productive) Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
_X_ Air quality permit (AQB review)
__ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____

Comments: No special concerns – using a double or small triple drilling rig to drill a vertical Amsden Formation well test. No gas gathering system exists in this area. Associated sweet gas and H2S gas in limited volumes can be flared under Board Rule 36.22.1220, if no gathering systems are in close proximity to this well.

Water Quality

(possible concerns)

Salt/oil based mud: No,- surface hole will be drilled with freshwater. Main hole will be drilled with freshwater drilling mud system.
High water table: No high water table in the area of review.
Surface drainage leads to live water: No,
Water well contamination: No water wells in the area This well will drill and set 8 5/8" surface casing to 600' and cement to surface. If productive 5 ½" production casing will be run and cemented.
Porous/permeable soils: No, silty "Gumbo" clay soils.
Class I stream drainage: No Class I stream drainages.

Mitigation:
_X_ Lined reserve pit
_X_ Adequate surface casing
__ Berms/dykes, re-routed drainage
__ Closed mud system
_X_ Off-site disposal of solids/**liquids** (in approved facility)
_X_ Other: Drill cuttings will be buried in the lined reserve/cuttings pit and mixed off with dry subsoil. Cuttings pit will be closed when dry. A minimum of four feet (4') dry subsoil and topsoil will cover the reserve/cuttings pit.

Comments: Freshwater mud system to be used on surface hole. freshwater mud system will be used out from under surface casing to 6300' TD. Fluids in the lined reserve pit will be trucked to a permitted Class II Disposal. The reserve/cuttings pit will be allowed to dry and then mixed buried with cuttings and subsoil with at least 4' of cover. No concerns.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: No live water stream crossings.
High erosion potential: No, about 15' maximum cut/fill required.
Loss of soil productivity: No, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.
Unusually large wellsite: No, a average location, 250X250' size required.
Damage to improvements: Slight, surface use is grass and sagebrush grazing land.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
_X_ Stockpile topsoil
__ Stream Crossing Permit (other agency review)
_X_ Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
X Other: Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28).

Comments: Access will be from existing county road, Musselshell Trail Road. About 400' feet of new road will be constructed into this location. Freshwater drill cuttings and mud solids will be buried in the lined reserve/cuttings pit. Lined pit will backfilled with 4' of cover when dry. Drilling fluids will be trucked to a Class II Disposal. No concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: No residences within a 1 mile radius from this location. The town of Custer, Montana is about 17+ miles to the southeast from this location.
Possibility of H2S: slight chance of H2S.
Size of rig/length of drilling time: Triple derrick drilling rig, about 10 to 15 days drilling time.

Mitigation:
_X_ Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____

Comments: Operational BOP and adequate surface casing should mitigate any problems. (BOP's 3,000 psig annular, pipe and blind rams) rule 36.22.1014. No concerns.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.
Proximity to recreation sites: None identified.
Creation of new access to wildlife habitat: No
Conflict with game range/refuge management: No
Threatened or endangered Species: Threatened or endangered species identified in this county are the Pallid Sturgeon, Interior Least Tern and the Black-Footed Ferret. Candidate species are the Greater Sage-Grouse and Sprague's Pipit. NH tracker website lists four (4) "Species of Concern" in T7N R32E. They are the Black-tailed Prairie Dog, Greater Sage-Grouse, Loggerheaded Shrike and the Brewers Sparrow.

Mitigation:

__ Avoidance (topographic tolerance/exception)
__ Other agency review (DFWP, federal agencies, DSL)
__ Screening/fencing of pits, drillsite
__ Other:_____

Comments: Private surface grazing land immediately adjacent to county gravel road. There maybe species of concern that could be impacted by this wellsite. The Board of Oil & Gas has no management authority over private surface lands.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified.

Mitigation

__ avoidance (topographic tolerance, location exception)
__ other agency review (SHPO, DSL, federal agencies)
__ Other:_____

Comments: Private surface grazing land. There could possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

Social/Economic

(possible concerns)

__ Substantial effect on tax base
__ Create demand for new governmental services
__ Population increase or relocation

Comments: Well is a wildcat, unless/until production is established, no social or economic impact is likely.

Remarks or Special Concerns for this site

Well is a 6300' TD vertical Amsden Formation well test.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.

_____
_____

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the

human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/ Thomas Richmond
(title:) Administrator
Date: January 31, 2014

Other Persons Contacted:

Montana Bureau of Mines and Geology GWIC website
(Name and Agency)
Yellowstone County water wells
(subject discussed)
January 31, 2014
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES
MONTANA COUNTIES, Yellowstone County
(subject discussed)

January 31, 2014
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
T7N R32E
(subject discussed)

January 31, 2014
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: __ _____
Others present during inspection: __ _____